Evaluation of the Spontaneous Awakening Trial Protocol: Staff Nurse Facilitators and Barriers to Compliance

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Abstract

Every year 5.7 million people are admitted to an intensive care unit (ICU). Many of these patients require continuous sedation to tolerate invasive life support methods necessary for their care. Continuous sedation has been shown to lead to negative outcomes such as increases in duration of mechanical ventilation, length of stay, morbidity, and mortality. Recent research has shown that utilizing a spontaneous awakening trial, or SAT, can improve patient outcomes through decreases in duration of mechanical ventilation, decreases in ICU length of stay, and decreases in morbidity and mortality. The surgical intensive care unit at this institution has documented low compliance with a SAT protocol. This low compliance could be leading to increases in duration of mechanical ventilation and poor outcomes for these patients. Focus groups comprised of bedside nurses were utilized to explore the possible reasons behind low compliance. Four focus groups took place over the course of one week with 17 total nurse participants. The focus groups were recorded and transcribed. Transcriptions were analyzed for themes using a classic analysis strategy. Three themes emerged from the analysis. These themes included a lack of awareness of the SAT protocol, a lack of continuing education regarding a SAT protocol, and a lack of understanding of the benefits of a SAT protocol. Several suggestions were made to combat these issues including the use of nurse champions and an interdisciplinary group to re-work the protocol and form a continuing education program for staff. Ideally these tools can help increase knowledge of and compliance with the SAT protocol in order to improve patient outcomes.

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Section One: Nature of the Problem

Introduction to the Problem

Every year in the United States approximately 5.7 million people are admitted to the intensive care unit (ICU) and anywhere from 20-30% of these patients require mechanical ventilation (Society of Critical Care Medicine, 2017). Often these patients who require mechanical ventilation also require increased amounts of sedative medications to promote comfort and safety to tolerate the invasiveness of such an intervention. However, the use of sedation has several negative effects such as immobility, inability to communicate, and delirium. The use of excess sedation can lead to prolonged time on mechanical ventilation and increased ICU length of stay (LOS) resulting in increases in morbidity and mortality and an increased cost of care (Dasta & Kane-Gill, 2009). A low compliance with protocols for sedation weaning and interruption leads to an increase in ICU LOS, mortality, and other adverse events (Miller, Bosk, Iwashyna, & Krein, 2012). The surgical intensive care unit (SICU) at this large academic medical institution has a low compliance with the sedation weaning and interruption protocol which may be associated with increased LOS, morbidity, and mortality.

Recent trials have studied the efficacy of performing a daily spontaneous awakening trial (SAT) with the daily spontaneous breathing trial (SBT). Several studies in the mid-1990s established the daily SBT as the evidence-based method for ventilator weaning and extubation. The SBT is the gold standard method practitioners use to determine a patient's readiness to extubate. Classically the SBT trial involves decreasing the support from the ventilator to allow the patient to breathe on their own for a period of time, usually at least thirty minutes

(MacIntyre, et al., 2001). Passing the SBT trial normally indicates the patient is ready for extubation.

In more recent years research has revolved around the benefits of the SAT, or a daily interruption of sedation, and the combination of the SAT with the SBT. The SAT protocol involves stopping all of the patient's intravenous sedation medication in order to assess the neurological status and perform the SBT (Jones, Newhouse, Johnson, & Seidl, 2014). These trials have shown positive outcomes in terms of decreased duration of mechanical ventilation and ICU LOS.

The SAT protocol is an evidence-based guideline for weaning and discontinuing continuous sedation for patients that require these medications in order to tolerate mechanical ventilation. Despite the body of evidence, compliance with the SAT protocol is often low due to various reasons such as lack of understanding of the protocol and its benefits, and concern for patient safety and comfort (Tanios, de Wit, Epstein, & Devline, 2009). When compliance with the protocol is low the result is poor patient outcomes. Healthcare providers caring for this target population have an obligation to follow the protocol to improve outcomes and decrease adverse events.

Purpose of the Project

Currently, poor compliance with the SAT protocol in the SICU has been documented in a large Midwestern academic medical center. The medical center is located in an urban area and has over 900 inpatient beds. The SICU of interest to this project is an adult unit with 26 beds and over 100 registered nurses on staff. The current ventilator order set used for this population includes an order for the respiratory therapist to perform a daily SBT, if patient meets qualifications. However, this order set only includes a generic sedation weaning order for the

nurse to follow. The institution has a policy for SAT protocol implementation based on evidence; however, the documented low compliance with the protocol indicates barriers to implementation exist. The ICU quality group at this institution gathers this data from its information warehouse. This data was requested via the institution's "Data Quality Release Form" and the appropriate supervisor and administrator approved the request (See Appendix A). The data is de-identified and only reported as a frequency, or percentage of compliance with the SAT protocol or dose optimization for the unit. This data, identifying the frequency and percentage of compliance with the SAT protocol or dose optimization for the unit, was requested only for the purpose of establishing the need for the project -- evaluation of the unit-level SAT protocol implementation. The data showed that compliance for dose optimization in the SICU unit used for this project was 44.16% during fiscal year 2017 and for fiscal year 2018 through December is running at 48.22%.

The SAT protocol compliance problem affects each patient admitted to the SICU who requires mechanical ventilation and continuous sedation and meets qualifications for the SAT protocol. Since it is documented in the literature that compliance with the SAT protocol improves patient outcomes, and decreases morbidity and mortality, and the institution has SAT protocol guidelines in place, 100% compliance should be expected, and considered a top priority by nurses, respiratory therapists, nurse practitioners, and physicians who care for these ICU patients.

The primary objective of this project was to evaluate the implementation of the evidence-based SAT protocol in the SICU. Two sub-objectives were: 1) evaluating SICU nurses' understanding of the SAT protocol at this institution, and their perceptions of the benefits or harms for the patients when compliance with this protocol is high or low; and 2) identifying

nurses' perceived facilitators and barriers to performing the SAT protocol. In summary, the nature of the clinical inquiry for this project was to evaluate implementation of the evidence-based SAT protocol by seeking to understand the why compliance with the SAT protocol in the SICU is low, and to subsequently make recommendations for improvement.

Section Two: Review of the Literature

Clinical Practice Problem Statement

The clinical practice problem statement is written using a "meaning" template, which is the best fit for this project. How do SICU nurses who have completed an ICU orientation program perceive the importance of SAT protocol implementation, and facilitators and barriers to implementation?

The population of interest is the nurses working in the SICU at this institution. The intervention is the standard ICU orientation that each new nurse to the unit receives. This includes ICU orientation classes and one on one training with an experienced preceptor on the unit which usually lasts a couple of months. The outcome is compliance with the SAT protocol which will be evaluated through discovery of nurses' perceptions of the protocol's importance, and facilitators and barriers to adherence with the protocol.

Evaluation and Summary of Evidence from the Literature

Two literature reviews were conducted for this evidence-based practice project. The first concerned the evidence surrounding the use of a SAT protocol and the second reviewed the literature addressing barriers and facilitators for nurses using the SAT protocol.

For the first literature review concerning the SAT protocol the key terms "spontaneous awakening trial" and "daily sedation interruption" were used in the following databases: CINHAL, PubMed, Cochrane Library, and SCOPUS. The hallmark research study for this

protocol was conducted in 2000 so therefore only articles published since 2000 were included in the review. Over 200 articles were retrieved, but once this was narrowed down to only include the relevant research articles on the efficacy of the SAT protocol, the total number of articles to be used was nine. The nine articles include one systematic review, three well designed randomized-control trials, four well designed control trials that did not use randomization, and one cohort study. All of the articles used adult patients in an ICU undergoing continuous sedation and mechanical ventilation.

Figure 1 is an Evaluation Table of the evidence supporting the use of a SAT protocol. Kress and colleagues (2000) conducted the first research study to determine the efficacy of a SAT protocol. Their research showed that implementation of a SAT protocol decreased duration of mechanical ventilation and ICU LOS (Kress et al., 2000). Since this time several other research studies have replicated the SAT protocol with similar results. In 2014 Chen and colleagues conducted a systematic review and found eight randomized-control trials affirming that the implementation of a SAT protocol decreased both duration of mechanical ventilation and ICU LOS (Chen, Liu, Chen, & Wang, 2014).

Seven of the studies that met criteria for inclusion used duration of mechanical ventilation as the major the major dependent variable. Six of these studies also evaluated ICU LOS.

Jones, Newhouse, Johnson, and Seidl (2014) conducted a study in a 23-bed mixed ICU, using paired SBT and SAT protocol implementation. Their results showed a decrease in duration of mechanical ventilation but no change in ICU LOS. In 2015, a multi-site study involving a collaborative among 20 ICUs that implemented a paired SBT and SAT protocol demonstrated a

decrease in mechanical ventilation duration and ICU LOS (Klompas, et al., 2015). In 2017 Lee and colleagues replicated these results with their patients in a burn ICU.

Observation and cohort studies have demonstrated similar results. In 2014 Dale and colleagues conducted an observational cohort study of almost 1,500 patients in a 24-bed trauma and SICU in which they implemented a sedation de-escalation protocol, but not a true sedation interruption. The results showed a decrease in mechanical ventilation duration and ICU LOS despite the lack of a of true sedation interruption. Finally, a prospective cohort study of 296 ICU patients at a large academic medical center, in which a bundle that included a sedation interruption for patients on continuous sedation was implemented, also showed a decrease in duration of mechanical ventilation (Balas, et al., 2014).

Several of the studies also evaluated ventilator associated events or complications, such as pneumonia. Klompas and colleagues (2015) found that the implantation of a paired SAT and SBT protocol decreased the rate of ventilator associated events from 9.7 events to 5.2 events per 100 episodes of mechanical ventilation, and decreased pneumonia episodes from 0.88 to 0.52 per 100 episodes. Lee and colleagues (2017) also demonstrated a decrease in pneumonia rates with the implementation of the SAT protocol from 8.05 down to 3.06 per 1,000 ventilator days. Finally, a group of Iranian researchers conducted an 80-patient randomized control trial, and found that a daily sedation vacation protocol reduced the rate of ventilator-associated pneumonia by 15% on the third day of ventilation, 37.5% on the fourth day, and by 27.6% on the fifth day of mechanical ventilation (Shahabi, Yousefi, Yazdannik, & Alikiaii, 2016).

Two studies established a decrease in the incidence of delirium with the implementation of a SAT protocol. A study in the trauma/SICU showed a decrease in delirium by nearly 4% after implementation of the sedation de-escalation protocol (Dale et al., 2014). A second study

instituted the use of a bundle protocol that included daily sedation interruption but also involved increased delirium monitoring and early mobilization measures. Results demonstrated a decrease in delirium incidence from 62.3% pre- implementation to 48.7% post-implementation (Balas et al., 2014).

Two unique outcomes not evaluated by the other articles were noted in the research findings of Kress and colleagues (2000) and Girard and colleagues (2008). In the original SAT protocol research article by Kress and colleagues (2000) the use of diagnostic tests to evaluate altered mental status was also reviewed. They concluded that in the control group, without the SAT protocol, 27% of patients underwent testing for changes in mental status compared to only 9% of patients in the intervention group who underwent the SAT protocol (Kress et al., 2000). Girard and colleagues (2008) were also the only researchers to comment on likelihood of death in the year following enrollment in the study protocol, and found that patients in the intervention group, were 32% less likely to be die at any instance during the year after enrollment. They calculated that for every seven patients that were enrolled in the intervention group, one life was saved (Girard et al., 2008).

The second literature review addressing the barriers and challenges of implementing the SAT protocol used the following key terms; “SAT and barriers,” “SAT and challenges,” “sedation interruption and barriers,” “sedation interruption and challenges,” “sedation interruption and nursing,” and “SAT and nursing.” As before the CINHAL, PubMed, Cochrane Library, and SCOPUS databases were used for the search. This yielded a total of seven separate relevant articles. However, two of the articles were re-writes of the same study and therefore the total number of articles was brought down to five. Again, articles were only used if they were published since 2000 since this is when the original SAT protocol research was conducted. The

five articles included three cohort survey studies and two qualitative studies using interviews and focus groups.

Figure 2 is an Evaluation Table of the research concerning the barriers and challenges of SAT protocol implementation. Roberts and colleagues (2010) conducted the earliest evaluation of predictors for sedation interruption in two academic medical centers, which included five ICUs, through surveying 67 bedside nurses using an interview instrument they developed through literature review and multi-disciplinary refining. They used multivariate analysis of the interview responses and found that daily interruption of sedation (DIS) was not widely used due to a number of variables. These variables included both patient and nurse related factors. Some of the patient factors that resulted in the nurse being less likely to perform DIS included; higher doses of midazolam (a sedative benzodiazepine), higher oxygen requirements, agitation, lower blood pressure, younger age, and male sex. Nurse factors related to a decreased willingness to perform DIS included older nurses, nurses less experienced with DIS, and nurses with less continuing education in the past year regarding sedation (Roberts, de Wit, Epstein, Didomenico, & Devlin, 2010).

In 2012 and 2013 Miller and colleagues conducted two research studies concerning challenges with and attitudes towards SAT protocols. The first study (2012) was done in a 20-bed medical ICU and utilized focus groups to discuss nurses' attitudes and barriers to implementation of DIS. Researchers analyzed the data gathered for themes but could find no consensus among participants as to why DIS should be done, who should be excluded, and how it should be performed. The following year Miller and colleagues (2013) went on to conduct a survey study of 73 hospitals in Michigan and received responses from 241 multi-disciplinary participants. Using multiple statistical analysis methods, they found the fear of short term

adverse effects, staff fears concerning SATs, and the perception that SATs were hard work all negatively impacted SAT implementation.

Finally, Sneyers and colleagues (2014) initially conducted a small interview study in four Belgian ICUs involving 21 healthcare providers and evaluated barriers that resulted in low DSI (daily sedation interruption) compliance. They broadly found that barriers to DSI compliance arise from healthcare provider, DSI guideline, and system characteristics. Sneyers and colleagues (2017) then went on to conduct a larger survey study of all 101 ICUs in Belgium involving almost 900 healthcare providers. They concluded that a lack of familiarity with DSI was the strongest predictor for low compliance with the protocol.

Critical Appraisal of the Evidence

Figure 3 synthesizes the evidence found to support the use of a SAT protocol and Figure 4 shows the level of evidence summary in favor of the SAT protocol. The evidence supporting the utilization of a SAT protocol is largely high-level evidence. Eight of the nine articles are either levels I, II, or III with the remaining article being a level IV study. The literature is also quite recent. The original study on the use of a SAT protocol was published in 2000 (Kress, et al., 2000) and then replicated in 2008 by Girard and colleagues. The remaining articles have all been published since 2014. All of the studies were done with adult patients and all but one study was done with exclusively ICU patients. This makes the evidence generalizable to the adult ICU patient population being used for this quality improvement project. The body of evidence supports the use of a SAT protocol to improve patient outcomes.

Eight of the nine of the articles retrieved to support the SAT protocol, found a decrease in duration of mechanical ventilation. The remaining article did not evaluate duration of mechanical ventilation. Six articles found a decrease in ICU LOS and three found a decrease in overall

hospital LOS as well. Three studies demonstrated a decrease in ventilator associated events such as pneumonia and two showed a decrease in the incidence of delirium with the use of a SAT protocol. One article found a decrease need for tracheostomy for patients who underwent a SAT protocol and another found a decrease in the need for neurological testing in these patients.

Only one study was able to demonstrate a mortality benefit (Girard, et al., 2008). Two other studies evaluated the impact of a SAT protocol on mortality but found no change (Klompas, et al., 2015 & Lee, et al., 2017). Additional studies demonstrating a morality benefit would likely improve clinician with SAT protocol implementation. It would also be helpful to have a cost analysis of the benefits of utilizing a SAT protocol, since it would seem that the improved outcomes would also lead to a decrease in overall cost of hospitalization for the patient. For the most part, the evidence shows substantial benefits to the use of a SAT protocol with little downside or safety concerns. Overall, a SAT protocol is a no cost, low risk, evidence-based practice tool that clinicians should be using to improve patient outcomes.

The SICU being used for this project has a SAT protocol policy however compliance is low. Therefore, the purpose of conducting the second literature review was to discover what research has been done concerning the feasibility of and barriers and challenges to implementing the SAT protocol. The SAT protocol seems like a fairly feasible practice for ICU nurses however compliance remains low in the unit used for this project. Five research studies were found that address the barriers and challenges with a SAT protocol. A synthesis table was not made as the results were quite varied and did not lend themselves to straightforward synthesis in table form. However, Figure 5 is a table summarizing the levels of evidence found during this literature review. Three studies were cohort studies using survey and interview data and two studies were qualitative in nature using focus groups and interviews. In general researchers found that SAT

protocol practices can vary widely and many factors play a role in compliance. This quality improvement project seeks to discover the feasibility of, challenges with, and barriers to SAT protocol implementation in the SICU at this academic medical center.

Presentation of Theoretical Basis

Imogene King's Theory of Goal Attainment is the theoretical framework that guides this quality improvement project. King's theory describes how patients interact with their environment to reach desired outcomes, or goals (King, 1992). This theory is thorough in its description of the nurse-patient relationship and interactions that occur in order for the patient to reach better outcomes and obtain health. When ICU patients are on mechanical ventilation with continuous sedation the goal is to be able to remove these interventions so the patient is able to achieve health as they are able to progress. The SAT protocol is an evidence-based protocol that guides the healthcare providers to achieve both of these desired goals.

King also uses her Theory of Goal Attainment (1981) to provide a model which describes how individuals interact with their environment as well as how nurses interact with patients, groups, communities, and societies. In this case where the compliance with the SAT protocol is low on a specific nursing unit, the Theory of Goal Attainment can be applied to how this group of nurses interacts with their patients, each other, and their environment to achieve higher compliance rates and therefore better health outcomes for the patients. The goal is to change the unit culture to promote compliance with the SAT protocol.

Evidence-based practice is the process of evaluating available research and theories in combination with clinical expertise and patient preference in order to inform clinical decisions and improve patient outcomes, quality, and satisfaction (Melnyk & Fineout-Overholt, 2015). This quality improvement project strives to discover ways to increase compliance with an

evidence-based practice tool in order to improve patient outcomes. There are several models of evidence-based practice the clinician can utilize to guide the process of implementation. In 1999, Melnyk developed "The Evidence-Based Advancing Research and Clinical Practice Through Close Collaboration Model" (ARCC model) to guide the evidence-based practice process. This model will be utilized to inform and guide this quality improvement project.

The ARCC model begins with an assessment of the current state of the organization and the organizational readiness for an evidence-based practice change along with an evaluation of the potential barriers to change (Melnyk & Fineout-Overholt, 2015). This last piece directly applies to the quality improvement project at hand. The purpose of this quality improvement project is to discover the reasons for poor SAT protocol implementation compliance through the use of focus groups, and to analyze the information for themes in order to make a recommendation for a practice change that will improve care.

The organization's mission statement includes improving health for patients through research and innovation. The SAT protocol is a well-researched, evidence-based practice method to improve patient care. Increasing compliance with the protocol will align the unit's practice with the organization's mission statement to improve health outcomes for patients.

Utility and Feasibility

The intervention involved conducting an evaluation utilizing focus groups, to determine reasons the SAT protocol implementation in the SICU is less than satisfactory. This is directly applicable to evidence-based care and patient outcomes. The benefits of the project include a better understanding of the reasons behind why the unit has low compliance with the SAT protocol, and recommendations that will hopefully lead to improvement in protocol compliance.

The project was feasible. This was a low-cost quality improvement project. Costs that were incurred included a payment for transcription services for transcribing each focus group discussion as well as a small cost to provide refreshments for each group. There were no training needs. The focus groups were conducted on the unit in a breakroom for ease of access and to encourage participation. The time commitment from the moderator included time spent with focus groups and time reading transcripts and analyzing data gathered. Focus group participants were only away from their unit for less than ten minutes to participate. The nurse manager on the unit approved and was committed to the project. The healthcare providers on the unit should be interested in the outcomes and recommendations for practice change in order to improve compliance with the SAT protocol as well as patient outcomes.

Additionally, there was minimal risk involved in the project. It was anticipated that risk to the nurses participating in the groups would be minimal because: 1) the transcribed data from the focus groups were de-identified and 2) nurse participants used first names only during the focus group. Additionally, the option to use a pseudonym was offered. No patients were involved in this project in any way.

Four focus groups took place over a five-day time period. The discussions were then professionally transcribed verbatim by an independent transcription service and analyzed by the author for themes. The themes discovered helped to form a basis for a practice change recommendation that will be returned to the manager and nursing staff.

Recommendations Summary

The recommendations for practice will include recommendations for achieving full compliance with the SAT protocol for nurses working with patients who are undergoing continuous sedation in the SICU at this academic medical center. Kress and fellow researchers

(2000) established this with their original research using a randomized control trial and demonstrating that a SAT protocol leads to a decrease in both duration of mechanical ventilation and ICU LOS. Girard and colleagues (2008) replicated this again using a randomized control trial and finding decreases in duration of mechanical ventilation, ICU and hospital LOS, as well as an overall mortality benefit. Since this time several more studies have been conducted and in 2014 Chen and colleagues published a systematic review finding affirming the SAT protocol reduced duration of mechanical ventilation and ICU LOS. By using focus groups, this project sought to understand why the compliance rate with the SAT protocol is low for this unit and what can be done to improve compliance.

The stakeholders in this project include all of the healthcare providers who work in the SICU; this includes the nurses, respiratory therapists, nurse practitioners, physicians, and nursing managers. The patients and families also have a stake in the project as improved compliance will lead to improved patient outcomes. The focus groups included staff nurses who perform SATs; the focus group discussions were held in close proximity to the unit for a short time period, and refreshments were provided to encourage participation and minimize barriers to participation. The focus group questions were semi-structured to facilitate active discussion and promote engagement and honest responses.

Section Three: Methods

Recommendations for Evaluation of an Implemented Evidence-based Practice Protocol

The evidence supports the use of a SAT protocol for patients undergoing mechanical ventilation and continuous sedation in the ICU. However, compliance with the protocol is low in the SICU at this institution. Research related to barriers and challenges with implementation of the SAT protocol revealed multiple issues and a variety of possible reasons for low compliance.

Therefore, focus groups were employed to help discover unit specific factors as to why compliance with the protocol is low, and allow for recommendations for improvement of practice, patient care, and protocol adherence to emerge from the focus group findings.

Plan for Evaluation of the Evidence-based Practice Protocol

The ARCC model developed by Melnyk in 1999 was selected to guide this evidence-based practice project. The ARCC model provides a framework to guide both implementation and sustainability of evidence-based practice. This is accomplished through first assessing organizational readiness for change, followed by an assessment of the barriers to evidence-based practice change, and finally through the utilization of expert mentors to facilitate implementation of evidence-based practices (Melnyk & Fineout-Overholt, 2015). This quality improvement evaluation project aimed to focus on the second part of the ARCC model and identify strengths and barriers to protocol implementation. Melnyk and Fineout-Oveholt (2015) acknowledge that many potential barriers to evidence-based practice implementation exist in the healthcare environment and the ARCC model provides guidance for overcoming these barriers.

This quality improvement evaluation took place in the SICU at a large academic medical center. The unit has 26 beds and over 100 nurses on staff. The SICU cares for surgical, trauma, and burn patients who have critical care needs such as mechanical ventilation, intravenous blood pressure support, invasive hemodynamic monitoring, intravenous sedation, continuous dialysis and a variety of other critical care issues. This patient population mirrors the patient populations studied in the numerous research articles discussed in the literature review for both the SAT protocol, and barriers to implementing the SAT protocol. All of these studies involved ICU patients who required continuous sedation and mechanical ventilation.

This quality improvement initiative evaluation generated findings that will be used to inform redirection of the institution's SAT protocol implementation in the SICU, and will not be generalizable or transferrable to any other setting or institution. Rather it was an evaluation of an evidence-based guideline already in place.

Nurse recruitment, selection, and focus group process. All nurses who are employed in the SICU were notified of focus group dates and times via posters and e-mail. Nurses who have completed orientation and are working during the times of the focus group were invited to participate by the DNP moderator if they were able. Focus groups were anticipated to be small, and were held in a private room close to the unit for approximately ten minutes so as to minimize interruptions to the nurses' workflow during their shift. Nurses were asked to participate in a focus group only during a scheduled shift. Refreshments were provided as incentive to participate.

Every effort was made to promote honest engagement in the discussion. Minimal risk to nurse participants was anticipated; nurses volunteered, were verbally consented, were identified during focus groups by first name only, and had the option to use a pseudonym. The DNP moderator went over consent for participation in the introductory script that was read prior to beginning each focus group. This script included an introduction, procedures, incentives (light refreshments), risk, confidentiality, and informed consent. See Appendix B for the introductory script and consent that was read prior to each focus group. This project had approval from the unit's nursing manager. The nurses on the unit are also members of the Ohio Nurses Association nurses' union and the appropriate ONA representative was contacted and gave the required pre-approval. The project was approved by the DNP Project Feasibility Committee, and was "deemed" as a quality improvement project, not research, by the Office of Responsible Research.

Institutional support, barriers, and facilitators. This institution places a high priority on evidence-based practice and has several advanced practice nurses in leadership roles to facilitate and monitor quality improvement and evidence-based practice changes. As an academic institution, the medical center is also tied to a highly ranked college of nursing with its own center for evidence-based practice. Together these things help strengthen the organization's readiness for change and promote a culture of evidence-based practice.

Several facilitators and barriers for this unit specific evaluation of an evidence-based practice protocol exist. Potential barriers that could have been encountered include low focus group turnout and lack of robust discussion regarding the SAT protocol during the focus groups themselves. These barriers were overcome by using several strategies to optimize focus group turnout and discussion. The major approach to help reduce barriers included conducting small focus groups that were held close to the unit for approximately ten minutes so as to minimize interruptions to the nurses' workflow during their shift. Nurses were asked to participate in a focus group only during a scheduled shift. Refreshments were provided as incentive to participate. Every effort was made to promote honest engagement in the discussion, including clarifying that their participation was voluntary, that first names were to be used, and that they may use a pseudonym. These strategies helped address the aforementioned potential barriers.

Focus group discussion involving bedside SICU nurses was the primary method of measurement for this quality improvement initiative. Focus groups are used to "…explore perceptions, feelings, and thinking about issues, ideas, products, services, or opportunities" (Krueger & Casey, 2015, p. 7). For this project the focus groups were utilized to seek responses, from nurse participants, about their perceptions of the SAT protocol including facilitators and barriers. Success was measured through the capturing of open, honest, engaged focus group

discussion that yielded themes regarding facilitators and barriers to the SAT protocol from which recommendations were formed for practice change. Evaluation was conducted in the form of a thematic analysis of focus group discussions.

An established tool for this specific focus group topic does not exist. The literature review concerning facilitators and barriers to implementation of a SAT protocol revealed that two of the studies used an interview instrument that was developed using interdisciplinary collaboration (Roberts, et al., 2010 & Sneyers, et al., 2017). Similarly, the focus group discussion questions for this project were evaluated by nurses, nurse practitioners, a pharmacist, and a physician, all who work with ICU patients and are familiar with the SAT protocol, for feedback and recommendations to help ensure clarity and applicability to the project objectives.

Krueger & Casey (2015) describe an ideal set of questions for a focus group as being predetermined and sequenced. This means that questions at the beginning of the discussion are more general and become more specific as the discussion continues. Questions should also be opened ended and developed with careful consideration and input (Krueger & Casey, 2015). Keeping these guidelines in mind the following five questions were derived from the synthesis of the literature, and developed in a logical sequence for this topic, to yield basic information first, followed by more specific information as the discussion developed:

1. How did you learn about the SAT protocol on your unit? This question serves as a broad introduction to the topic of the SAT protocol to get participants to start thinking about the topic. Roberts and colleagues (2010) also found that nurses with less continuing education regarding sedation were less likely to comply with the sedation interruption protocol.

2. Are you familiar with using the SAT protocol?

   Two of the studies included in the literature review found that nurses with less experience using a daily interruption of sedation (Roberts et al., 2010), and those who lacked familiarity with the sedation interruption protocol (Sneyers et al., 2017) were more likely to have low compliance with performing the SAT protocol.

3. Have you had any continuing education regarding the SAT protocol or the use of continuous sedation?

   This question seeks to delve a little bit further and explore what the nurses' understanding of the protocol is; now that the topic has been introduced and it has been determined whether they are familiar with it. In 2012 Miller and colleagues conducted focus groups to determine nurses' attitudes towards daily sedation interruption but upon analysis found that participants could come to no consensus as to how and why it should be done.

4. What do you see as potential benefits to patients or harms to patients with utilizing the SAT protocol?

   Several of the articles found for the literature review concerning the SAT protocol and its utilization found that lack of familiarity with and poor understanding of why and for whom the SAT protocol should be used lead to poor compliance (Miller et al., 2012 & Sneyers et al., 2017). If nurses do not understand the why, or the benefits, behind the SAT protocol, then they are less likely to be motivated to comply with the protocol.

5. What makes following the SAT protocol easy?

   This question will help shed light as to what the nurses do, or what on the unit, facilitates compliance with the SAT protocol. This is unit specific information and may reveal ideas for a more formal practice change based on nurse specific answers. Nurses who were

more experienced and familiar with a SAT protocol were more likely to comply with the protocol (Roberts et al., 2010 & Sneyers et al., 2017).

6. What makes following the SAT protocol difficult?

   The final question of the focus group will allow discussion of barriers to compliance with the SAT protocol on this unit. The literature review revealed many variables that play a role in compliance with a SAT protocol, but these focus groups will yield unit specific information that leads to poor compliance. This information together with an analysis of facilitators will hopefully lead to a practice change that will work for this unit.

At the end of each focus group the moderator invited participants to share anything else they felt applied to the subject, and a summary was provided to allow for any clarifications to be made to ensure accuracy.

Before each focus group began, the moderator introduced the purpose of the focus group by reading the formal project purpose which includes a statement regarding consent (see Appendix 1), discussing the fact that the focus group will be audio-recorded and transcribed, and that the findings will be summarized by theme. The moderator emphasized that the transcribed data would be de-identified, that the participants should refer to themselves and colleagues by first names only, and that they could choose to use a pseudonym if they preferred. The moderator confirmed that all participants were willing to remain to engage in the focus group voluntarily before beginning. At the conclusion of the focus group, the moderator also asked for basic demographic data that was reported only by an ID number indicating which Focus Group this participant was included in. The survey results are discussed in the “Findings” section of this paper. Table 1 shows the focus group demographic survey.

Table 1 Demographic Survey

What is your highest level of nursing education?	ADN BSN	MSN DNP or PhD
What is your age group?	20-25 25-30 30-35 35-40	40-45 45-50 50-55 55-60+
How many years of experience do you have working in this ICU?	0-5 5-10	10-15 15+

The single moderator was the only person who conducted data collection. This eliminated the need to train a second moderator or account for inter-rater reliability. Additionally, the moderator did not conduct the focus groups on her primary work unit in order to avoid any conflict of interest with the nurse participants. Data were collected during four focus groups over the course of five days and four different shifts. Two focus groups were conducted during day shift hours (7 am-7 pm) and two focus groups were conducted during night shift hours (7 pm-7 am). The focus groups were audio recorded and transcribed verbatim by an independent professional transcription service before analysis. Identities of nurses who participate in the focus groups were kept anonymous and they were identified only as “Interviewee” on the transcript. The focus group recordings will be destroyed upon completion of the project.

Krueger & Casey (2015) describe the classic analysis strategy for focus group data that was used for this quality improvement evaluation. This approach is an organized method for identifying similarities and themes across focus groups. First, the focus groups are separated using different colors of paper and then answers to questions are cut and placed with the appropriate question. This is done with the transcript from each group. Then under each question

like answers are grouped. Once this is completed for each focus group and every question the discussion points are analyzed for frequency, specificity, emotion, and extensiveness (Krueger & Casey, 2015). From this a descriptive narrative is written for the responses to each question. This allows for the discovery of themes and from this, interpretations of the responses and recommendations can be formulated (Krueger & Casey, 2015). These recommendations will be shared back with the SICU including the bedside nurses, the nurse manager, and the ICU quality group that monitors this data to assist with and prompt a practice change.

The resources utilized for this project included the author/moderator of the focus group discussions, a professional transcription service, light refreshments for the focus group participants, a digital audio recorder, and a meeting room. No grants were applied for and there was no need for financial support or resources.

Section Four: Findings

Findings and Outcomes

A total of four focus groups were conducted over a period of five days over four different shifts (two on day shift and two on night shift). Altogether, 17 nurses participated; aggregate data on participants is presented later in this section.

Following completion of the four focus groups, the audio recordings were uploaded to a transcription website and were professionally transcribed verbatim producing four de-identified transcripts. These transcripts were then analyzed following the previously described systematic and thematic analysis strategy (Kreuger & Casey, 2015). Two rounds of coding were conducted, using different strategies. First, the transcripts were read and analyzed for major or recurring themes. These themes were highlighted using different colors for each focus group. Next, each of the transcripts was physically cut, by questions and answers, so the same questions and responses

from the different focus groups were grouped. If a response to a certain question answered a different focus group question it was placed with the grouping specific to the appropriate question. This analysis strategy allowed for easier and more focused discovery of themes across focus groups.

In the first round of coding, approximately six major concepts were identified that were consistent within and between the four focus groups, for example nurses were largely unaware of the SAT protocol, and concepts that might interfere with compliance overall. The first round of coding assisted in focusing the second round; through data reduction, concepts were combined during the second round, and eventually three major themes were identified.

The first focus group question "How did you learn about the SAT protocol on your unit?" was used to start the discussion. The question was revealing; many focus group participants indicated they were not aware of a SAT protocol for their unit. Only two nurses in one of the focus group mentioned being aware of the protocol for their unit. One nurse stated she was aware of the protocol because she is a charge nurse and participates on committees for forming and discussing policies for the unit. The other nurse stated she was a new graduate nurse who learned about the SAT protocol from her preceptor during orientation to the unit. Two other nurses also mentioned hearing about a SAT protocol but from other places such as the medical ICU or their former place of employment but not on their current unit. The patient's electronic medical record includes a field to chart whether or not a SAT was completed from the patient, however only one nurse who participated in the focus groups knew about it. In summary, a majority of participants responded to the first question by indicating that they were unaware of a formal protocol or guidelines for SATs on this unit.

The second planned question for the focus group was, “Are you familiar with using the SAT protocol?” Facilitating discussion around this question was more difficult than anticipated, since, prior to initiation of the focus groups, it was unknown to the moderator that most nurses were not aware of the SAT protocol. Only two participants gave an affirmative response to this question; the rest indicated they were not familiar with the protocol. However, in response to a different focus group question, “Have you had any continuing education regarding the SAT protocol or the use of continuous sedation?” one nurse mentioned she thought that a complete sedation vacation every 24 hours, allowing the patient to “wake up”, performing a patient assessment, then patient re-sedation was expected. A second nurse added: “…but sedate them at half, or something.” This same nurse then went on to say “It (the SAT protocol) never happens.” This indicates that these two nurses had, at minimum, been informed that there was some sort of a protocol related to SAT.

The third question asked if the nurses had ever had any continuing educations regarding the use of a SAT protocol or continuous sedation. For this question about half of the participants answered “no” and the other half indicated they thought that they had a continuing education module on SAT protocol or continuous sedation, but were not more specific on what it involved.

The fourth question regarding benefits and harms to patients when using a SAT protocol generated more discussion. A few nurses agreed on benefits such as “…get them off sedation and extubated” and “…potentially extubating and progressing.” Participants in one of the focus groups shared a consensus that a SAT protocol would help give patients a better chance to wake up, pass a breathing trial (SBT), and avoid over sedation. However, a few nurses also mentioned several potential harms that concerned them regarding the use of a SAT protocol. Many were

worried the patient could harm themselves or become “agitated” and “crazy.” Three nurses stated they would be worried about a patient self-extubating, potentially causing harm to themselves.

Participants in each of the four focus groups demonstrated a level of unfamiliarity with the SAT protocol and its use, so the last two questions were combined to expedite the discussion. These questions were: 5) what makes following the SAT protocol easy? And 6) what makes following the SAT protocol difficult? Two nurses stated the protocol would be easy to follow since the “…doctors are always wanting to wean the patients from continuous sedation,” and that they “…tend to shy away from using continuous sedation anymore.” One participant stated that the nursing staff makes efforts to collaborate with respiratory therapy, to coordinate the SBT with the SAT, but that participant did not say whether it was easy or difficult to do so. Several participants said that not being aware of the protocol made it difficult to follow. One participant stated it would be difficult to follow a SAT protocol with their patient population because the population is variable. One nurse expressed: “…what would make it difficult usually is the patient’s comfort or the patient’s ability to be able to, I guess, breathe normally without sedation.” Another difficulty mentioned by a participant was that family presence might cause patient agitation during the sedation trial.

Participants completed a demographic survey at the conclusion of the focus groups (Table 1). The results of this showed that a majority, 14 of the 17 participants, held a BSN degree. Three held a nursing diploma degree. The participants were of a wide age range, however, a majority 58%, 8 of 17, were under 30 years old, five were between 30 and 50 years old, and 4 participants were over 50 years old. Eleven of the 17, 64% of participants, indicated that they had less than five years of experience working on this unit. Four participants have been working in this SICU for over fifteen years. The demographic data reveals the focus groups

included a mix of younger and older nurses as well as experienced and less experienced. See Table 2 for a summary of demographic survey responses.

Table 2 Demographic Survey Responses

What is your highest level of nursing education?	ADN = 17.6% BSN = 82.4%	
What is your age group?	20-25 = 23.5% 25-30 = 23.5% 30-35 = 11.8% 35-40 = 11.8%	40-45 = 5.8% 45-50 = 0% 50-55 = 11.8% 55+ = 11.8%
How many years of experience do you have working in this ICU?	0-5 = 64.7% 5-10 = 5.8%	10-15 = 5.8% 15+ = 23.5%

Discussion

Four focus groups consisting of bedside SICU nurses were conducted to evaluate these nurses' perceptions regarding the SAT protocol on their unit. Analysis of the transcripts found themes consistent with the literature review concerning barriers and facilitators to SAT protocol compliance.

SICU nurses are unfamiliar with the SAT protocol. The first theme discovered from the focus groups, is a reflection of a lack of awareness or familiarity with a SAT protocol; this is consistent with findings from the literature. The nurses who participated in the focus group were largely unfamiliar with the SAT protocol for their unit. Both Miller and colleagues (2012) and Sneyers and colleagues (2017) found that a lack of familiarity with a sedation interruption protocol, and less experience with a protocol, lead to lower compliance. In their initial study

Miller and researchers also used focus groups of nurses and found no consensus on why a sedation interruption should be done indicating nurses had a general lack of familiarity with the subject and protocol. In a larger survey study, Sneyers and colleagues (2017) concluded that a lack of familiarity with daily sedation interruptions was the strongest predictor for low compliance.

Lack of education regarding the SAT protocol. A second theme found in the focus groups was that there was either a lack of continuing education, or lack of awareness of the availability of continuing education concerning the SAT protocol. About half of the participants were unaware of, or had never had any continuing education regarding the use of a SAT protocol or continuous sedation. Roberts and colleagues (2010) found that nurses with less continuing education regarding continuous sedation were less likely to comply with a sedation interruption protocol. As previously discussed, Miller and colleagues' (2012) analysis of nurse focus groups found that participants could not come to a consensus about how or why a SAT protocol should be done. This affirms the theory that a lack of education regarding how and why a SAT protocol is important is likely to lead to poor compliance with the protocol.

Deficit in understanding of benefits versus risks of the SAT protocol. During these focus groups nurses identified benefits and harms to patients they felt may be encountered with the use of a SAT protocol. Several nurses mentioned agitation, fear of self-extubation, or self-harm as reasons not to perform a SAT, which is comparable to findings by Roberts and colleagues in 2010 and by Miller and colleagues in 2013. Specifically, Miller and colleague (2013) found that the fear of short-term adverse effects and staff fears concerning a SAT negatively impacted compliance. Poor understanding of benefits and methods to minimize harm, or the chance of harm, likely leads to poor nurse compliance with a SAT protocol.

Three overall themes, which were revealed with regards to understanding nurses' perspectives with the SAT protocol in the SICU at this institution, emerged from the analysis. The first theme is that SICU nurses are unfamiliar with the protocol and for whom the protocol is to be utilized. The second theme is that education regarding the SAT protocol and the use of continuous sedation is absent, or inaccessible; that is, if it was available, nurses' ignorance of its existence makes it inaccessible. The final theme is that, since the benefits for patients associated with the usage of a SAT protocol are not understood by SICU nurses, nurses are less likely to comply, even if they are aware of the protocol; benefits include decreased mechanical ventilation time, LOS, pneumonia, delirium, and mortality. See Table 3 for a summary of the themes that emerged from the analysis with exemplary quotes from nurse participants.

Table 3 SICU Nurse Compliance with SAT Protocol Themes

Theme	Exemplar Quote(s)
SICU nurses are unfamiliar with SAT protocol	"I didn't know we had a specific protocol" "I've never heard of it [SAT protocol]"
Lack of education regarding SAT protocol	"Can't remember [having continuing education]" "No. Not that I remember [having continuing education]"
SICU nurses do not understand benefits of SAT protocol	"…you're not gonna do it [SAT protocol] when it's unsafe, like if you have a patient who's combative." "…could hurt themselves or almost pull their breathing tube out."

Limitations

Several limitations exist with this quality improvement project evaluation. The first is that as an evaluation (the focus group) of a quality improvement project (the SAT protocol), the

focus group findings are not transferrable to another unit or population of nurses and patients. This was a unit specific evidence-based practice protocol evaluation and therefore the findings are not transferrable. A second limitation was a slightly lower than expected nurse participation in the focus groups. Twenty nurse participants would have been preferred, which would have consisted of approximately 20% of the full-time staff, however only 17 nurses were able to participate. Some of the nurses stated that the time picked for the afternoon focus groups, 4 o'clock, was a busy time of day.

A third limitation was that environmental factors (i.e., busy times of day, participants having limited relief time away from their patients) made it challenging for the moderator to probe and ask participants for clarification beyond the four semi-structured questions guiding the focus groups. However, questions were strong and were derived from the evidence base; the fact that responses were largely consistent within and between the groups demonstrated a level of saturation, and the fact that responses were consistent with the evaluation of the literature on this subject is affirming.

A fourth limitation would be the fact that the focus groups only involved bedside nursing staff and did not engage the inter-disciplinary team. While bedside nurses are the staff responsible for performing the SAT protocol, respiratory therapists, pharmacists, physicians, and nurse practitioners also provide roles in caring for these patients. The protocol is inter-disciplinary in that it was written by a pharmacist, nurses collaborate with respiratory therapists for timing the SAT with the SBT, and providers are the ones ordering or asking nurses to wean sedation.

Section Five: Recommendations and Implications for Practice

Project Summary

This quality improvement project evaluation was conducted to facilitate appraisal of nurse-implementation of an important evidence-based protocol, the SAT protocol, in the SICU at a large academic medical institution. The literature shows that utilizing a SAT protocol for patients who require mechanical ventilation and continuous sedation is best practice and improves outcomes and decreases morbidity. However, the SICU used for this project has low compliance with the SAT protocol; the concern is that there is a likelihood poor protocol compliance can lead to negative outcomes. Four focus groups were conducted to evaluate nurses' perceptions and experiences regarding the SAT protocol. Themes emerged from the focus group analysis which helps shed light on reasons for the low compliance. These themes included a general lack of awareness of the protocol, a lack of continuing education regarding the use of sedation, and poor knowledge regarding benefits to patients with following the protocol.

Implications for Practice

This project is in keeping with the DNP Essentials (American Association of Colleges of Nursing [AACN], 2006) in that it helps to promote evidence-based practice and quality improvement. Essential I directs the DNP nurse to "describe the actions and advanced strategies to enhance…health care delivery" (AACN, 2006). This project directly evaluates the utilization of an evidence-based practice method to promote better health care outcomes for critically ill patients and describes strategies to enhance its delivery. Essential II promotes the DNP educated nurse to use advanced communication skills; this was through the facilitation of focus groups to evaluate a care delivery approach in the SICU. Essential III comes into play with the dissemination of the project findings and applying relevant findings to improve practice.

Essential VIII addresses “Advanced Nursing Practice” and will be used to guide practice improvement (AACN, 2006). This practice improvement project will address all three themes and include:

- Theme 1: Lack of familiarity with the SAT protocol. This issue could be addressed through inter-disciplinary discussions at the unit quality or policy review meetings. A champion from each group (nurses, respiratory therapists, pharmacists, and providers) could be chosen to encourage compliance with the protocol among their colleagues. Providers should be encouraged to discuss utilizing the SAT protocol for patients on continuous sedation during the review of the daily plan for the patient on inter-disciplinary rounds with the rest of the staff. These methods would help encourage all groups to be involved and more aware of the protocol policy.
- Theme 1: Lack of familiarity with the SAT protocol. This inter-disciplinary team of champions should also re-visit the SAT protocol policy to determine whether changes need to be made in order to increase compliance. These changes could relate to how sedation is currently used in the SICU and the nurses’ daily workflow. It may also involve the workflow of the respiratory therapist in coordinating the effort to combine the SAT with the SBT. Even though the policy should be formulated with the help of an inter-disciplinary team; compliance with the protocol comes down to bedside nursing staff. A nursing champion, such as the clinical nurse specialist on the unit, should take the lead on this to help change unit culture to one that promotes compliance. One option to help increase compliance would be to offer an incentive to nursing staff if they demonstrate a consistent increase in compliance rates.

- Theme 2: Lack of continuing education regarding the SAT protocol. This problem could be addressed through the inter-disciplinary formulation of a continuing education program for all staff, not just nurses. This would ensure all staff on the unit caring for these patients was receiving the same education on the protocol and that all groups had contributed to the education with their ideas for promoting compliance. Once staff completed a formal education program a post-test should be utilized to assess that education occurred. This education could then be tied in-to annual nursing education that the SICU nurses already do to refresh nurse's memory on the protocol and help promote consistent compliance.
- Theme 3: Lack of understanding of benefits of the SAT protocol. Benefits of the SAT protocol and promoting a better understanding of them could be done in a few ways. The first would be to tie benefits into the formal education program. Benefits of the SAT protocol should also be discussed on interdisciplinary rounds when the patient qualifies for a SAT to remind staff why it is being done and what the hope for completing the protocol is. The benefits of the SAT protocol should also be reviewed with all staff when unit quality data is released or updated, as it was found in the literature that poor compliance has several negative outcomes such as increased LOS, duration of mechanical ventilation, and rates of pneumonia.

This DNP project was for the purpose of conducting an evaluation of an implemented evidence-based quality improvement project. The thematic findings have limitations with regards to the limited focus group size, and the fact that the groups were not inter-disciplinary. However, the findings were consistent with and between groups, therefore reached a level of saturation, affirmed what had been discovered in the literature, and are therefore sufficient to inform

direction on recommendations to inform SICU nurses regarding the protocol and its benefits to patients. However, the evaluation project could be continued to gather more information regarding barriers to compliance with the SAT protocol.

Considering the consistency between the findings reported here and the strength of the literature, the recommendation is to move forward with an implementation project that addresses all three themes to increase awareness of, proper usage of, and benefits of using a SAT protocol for this population of patients. The SAT protocol is a well-researched, evidence-based protocol for improving the care of patients and outcomes. The protocol fits with the organization's mission statement, which includes improving the health of patients through research and innovation. Increasing compliance with the protocol will align the unit's practice with the mission of the organization.

If an education program regarding the SAT protocol is to be implemented, it is recommended that an inter-disciplinary team be instituted involving nurses, respiratory therapy, pharmacists, and providers (physicians and nurse practitioners). It is important that these groups are all aware of the current protocol and work together to coordinate better care for patients to improve outcomes. A representative from these groups could also be invited to a nursing staff meeting to review and discuss the current policy and formulate ideas for ways to improve compliance. If an educational tool or continuing education module is formulated it should be done so with the input of all groups so that all disciplines can be on the same page regarding understanding and executing the protocol consistently.

While this was a unit specific project it could easily be replicated in other units that are also struggling with SAT protocol compliance. The focus group findings may be similar or

different than the findings on this unit and would then be used to tailor a more specific action plan for improving compliance.

Methods for Dissemination

This SICU was selected for this project because the patients in this unit mirror those found in the literature review concerning the SAT protocol, and this unit has documented low compliance with the SAT protocol. These critically ill patients require many forms of specialized invasive care and evidence shows that the SAT protocol should be utilized to help improve this care and liberate patients from these invasive treatments earlier. This was an opportunity to help impact care for these patients through evaluation of barriers to the protocol utilization and formulation of a recommendation to improve practice.

These findings and recommendations should be disseminated back to the unit and the inter-disciplinary team that cares for these patients. This will involve making more than just the nurses who participated in the focus group aware of the findings. It is important to reach out to all the nurses on the unit, the nursing managers, the respiratory therapy group, the pharmacists, the nurse practitioners, and the physicians who work on this unit. To have the greatest impact, it would be helpful to share these findings and recommendations by presenting at a SICU inter-disciplinary quality group meeting or staff meetings for these groups. Dissemination in this manner is likely to be more meaningful and allow for discussion than simply sending out a letter or email to these groups. Ideally an inter-disciplinary education program can be formulated that can be utilized to enhance awareness, understanding, and compliance with the protocol that leads to a meaningful improvement in patient care.

References

American Association of Colleges of Nursing. (2006). *The Essentials of Doctoral Education for Advanced Nursing Practice.* Retrieved from: http://www.aacnnursing.org/DNP/DNP-Essentials.

Balas, M.C., Vasilevskis, E.E., Olsen, K.M., Schmid, K.K., Shostrom, V., Cohen, M.Z.,…Burke, W.J. (2014). Effectiveness and safety of the awakening and breathing coordination, delirium monitoring/management, and early exercise/mobility (ABCDE) bundle. *Critical Care Medicine, 42*(5), 1024-1036.

Chen, H.B., Liu, J., Chen, L.Q., & Wang, G.C. (2014). Effectiveness of daily interruption of sedation in sedated patients with mechanical ventilation in ICU: A systematic review. *International Journal of Nursing Sciences, 1*(4), 346-351.

Dale, C.R., Kannas, D.A., Fan, S.V., Daniel, S.L., Deem, S., Yanez III, N.D.,…Treggiari, M.M. (2014). Improved analgesia, sedation, and delirium protocol associated with decreased duration of delirium and mechanical ventilation. *Annals of the American Thoracic Society, 11*(3), 367-374.

Dasta, J.F., McLaughlin, T.P., Mody, S.H., & Piech, C.T. (2005). Daily cost of an intensive care unit day: The contribution of mechanical ventilation. *Critical Care Medicine, 33*(6), 1266-1271.

Dasta, J.F., & Kane-Gill, S. (2009). Pharmacoeconomics of sedation in the ICU. *Critical Care Clinics, 25*(3), 571-583.

Girard, T.D., Kress, J.P., Fuchs, B.D., Thomason, J.W.W., Schweickert, W.D., Pun, B.T.,…Ely, E.W. (2008). Efficacy and safety of a paired sedation and ventilator weaning protocol for mechanically ventilated patients in intensive care (awakening and breathing controlled trial): A randomized controlled trial. *The Lancet, 371*(9607), 126-134.

Jones, K., Newhouse, R., Johnson, K., & Seidl, K. (2014). Achieving quality health outcomes through the implementation of a spontaneous awakening and spontaneous breathing trial protocol. *Advanced Critical Care, 25*(1), 33-42.

King, I.M. (1992). King's theory of goal attainment. *Nursing Science Quarterly, 5*(1), 19-26.

King, I.M. (1981). *A theory for nursing: Systems, concepts, process.* Albany, NY: Delmar.

Klompas, M., Anderson, D., Trick, W., Babcock, H., Kerlin, M.P., Lingling, L.,…Platt, R. (2015). The preventability of ventilator-associated events. *American Journal of Respiratory and Critical Care Medicine, 191*(3), 292-301.

Kress, J.P., Pohlman, A.S., O'Conner, M.F., & Hall, J.B. (2000). Daily interruption of sedative infusions in critically ill patients undergoing mechanical ventilation. *New England Journal of Medicine, 342*(20), 1471-1477.

Krueger, R.A., & Casey, M. (2015). *Focus groups: A practical guide for applied research* (5th ed.). Thousand Oaks, CA: Sage Publications.

Lee, Y-L.L., Sims, K.D., Butts, C.C., Frotan, M.A., Kahn, S., Brevard, S.B., & Simmons, J.D. (2017). The combination of SAT and SBT protocols may help reduce the incidence of ventilator-associated pneumonia in the burn intensive care unit. *Journal of Burn Care & Research, 38*(2), e574-e579.

MacIntyre, N.R., Cook, D.J., Ely, E.W., Epstein, S.K., Fink, J.B., Heffner, J.E., Hess, D.,… American College of Critical Care Medicine. (2001). Evidence-based guidelines for weaning and discontinuing ventilatory support: A collective task force facilitated by the American College of Chest Physicians; the American Association for Respiratory Care; and the American College of Critical Care Medicine. *Chest, 120*(6 Suppl), 375S-395S.

Melnyk, B.M., & Fineout-Overholt, E. (2015). *Evidence-based practice in nursing and*

healthcare: A guide to best practice (3rd ed.). Philadelphia: Wolters Kluwer/Lippincot Williams & Wilkins.

Miller, M.A., Bosk, E.A., Iwashyna, T.J., & Krein, S.L., (2012). Implementation challenges in the intensive care unit: The why, who, and how of daily interruption of sedation. *Journal of Critical Care, 27*(2), 218.e1-7.

Miller, M.A., Krein, S.L., George, C.T., Watson, S.R., Hyzy, R.C., & Iwashyna, T.J. (2013). Diverse attitudes to and understanding of spontaneous awakening trials: Results from a statewide quality improvement collaborative. *Critical Care Medicine, 41*(8), 1976-1982.

Roberts, R.J., de Wit, M., Epstein, S.K., Didomenico, D., & Devlin, J.W. (2010). Predictors for daily interruption of sedation therapy by nurses: A prospective multicenter study. *Journal of Critical Care, 25*(4), 660.e1-7.

Shahabi, M., Yousefi, H., Yazdannik, A.R., & Alikiaii, B. (2016). The effect of daily sedation interruption protocol on early incidence of ventilator-associated pneumonia among patients hospitalized in critical care units receiving mechanical ventilation. *Iran Journal of Nursing and Midwifery Research, 21*(5), 541-546.

Sneyers, B., Henard, S., Laterre, P.F., Perreault, M.M., Beguin, C., Wouters, D.,…Spinewine, A. (2017). Predictors of clinicians' underuse of daily sedation interruption and sedation scales. *Journal of Critical Care, 38*, 182-189.

Sneyers, B., Laterre, P.F., Bricq, E., Perreault, M.M., Wouters, D., & Spinewine, A. (2014). What stops us from following sedation recommendations in intensive care units? A multicentric qualitative study. *Journal of Critical Care, 29*(2), 291-297.

Society of Critical Care Medicine. (2017). *Critical Care Statistics.* Retrieved from: http://www.sccm.org/Communications/Pages/CriticalCareStats.aspx.

Tanios, M.A., de Witt, M., Epstein, S.K., & Devlin, J.W. (2009). Perceived barriers to the use of sedation interruption: A multidisciplinary survey. *Journal Critical Care, 24*(1), 66-73.

Figure 1: Evaluation Table SAT Protocol

Citation	Design/Method	Sample/Setting	Major Variables Studied	Outcome measurement	Data Analysis	Findings	Level of Evidence	Quality of Evidence
Keeper Article 1: Effectiveness and safety of the awakening and breathing coordination, delirium monitoring/management, and early exercise/mobility (ABCDE) bundle								
Balas, M.C., (2014). Critical Care Medicine, 42(5), 1024-1036.	Prospective cohort, before (146) and after (150) study	296 patients; 5 adult ICUs, 1 step-down unit, 1 oncology/ hematology floor	IV- ABCDE bundle which includes sedation interruption DV- ventilator free days, delirium/coma, mobilization, mortality, time to discharge	Mean and standard deviation for continuous variables and frequencies or percentages for categorical variables	*t* test for pre- and post-analysis of continuous variables, chi square for categorical variables	↓ duration of MV ↓ incidence of delirium ↑ mobility	III	Good-large study in multiple different settings, good statistical analysis
Keeper article 2: Effectiveness of daily interruption of sedation in sedated patients with mechanical ventilation in ICU: A systematic review								
Chen, H.B., (2014). Int Journal of Nursing Sciences, 1(4), 346-351.	Systematic review	8 RCTs including 757 patients	IV- DSI DV- duration of MV, LOS, rate of tracheostomy	Meta-analysis, *p* value < 0.1 significant	Review Manager 5.2 meta-analysis	↓ Duration of MV ↓ ICU LOS ↓ rate of tracheostomy	I	Good-systematic review of RCTs with large number of patients included
Keeper Article 3: Improved analgesia, sedation, and delirium protocol associated with decreased duration of delirium and mechanical ventilation								
Dale, C.R., (2014). Annals of American Thoracic Society,	Observational cohort, pre (703) and post (780) implementation	24 bed trauma-surgical ICU	IV- sedation de-escalation protocol DV- duration of MV, delirium	Multivariable linear regression model, Cox proportional hazard model	STATA 11.2 used for analysis, *p* value < 0.05 significant	↓ Duration of MV ↓ ICU and hospital LOS ↓ delirium	IV	Fair- cohort study and did not use a true sedation interruption protocol, god

11(3), 367-374.			incidence, and LOS					statistical analysis
Keeper article 4: Efficacy and safety of a paired sedation and ventilator weaning protocol for mechanically ventilated patients in intensive care (awakening and breathing controlled trial): A randomized controlled trial								
Girard, T.D., (2008). The Lancet, 371, 126-134.	RCT Intervention group – 168 patients Control group- 168 patients	4 tertiary care hospitals 336 ICU patients	IV- paired SBT/SAT protocol DV- Duration of MV and ICU LOS	Multiple forms of statistical analysis used	*p* value < 0.05 significant	↓ Duration of MV ↓ ICU and hospital LOS ↑ self-extubation but same rate of re-intubation ↓ Mortality	II	Good- well designed RCT, powered for significance, large group of patients, good statistical analysis
Keeper Article 5: Achieving quality health outcomes through the implementation of a spontaneous awakening and spontaneous breathing trial protocol								
Jones, K., (2014). Advanced Critical Care 26(1), 33-42.	Retrospective chart review; before and after comparison Pre- 56 Post- 56	23 bed Medical-Surgical ICU patients	IV- SBT/SAT protocol DV- duration of MV and ICU LOS	Chi-square, Mann-Whitney *U*, Fisher exact test	SPSS used for data analysis	↓ MV duration No change in self-extubation No change in ICU LOS (accounted for)	III	Good- smaller study but still good statistical analysis and statistical significance found
Keeper Article 6: The preventability of ventilator-associated events								
Klompas, M., (2015). Am Journal of Resp and	Quality improvement collaborative, control trial	12 ICUs in collaborative and 8	IV- paired SBT/SAT protocol	Mixed effect regression models	SAS used for data analysis	↓ Duration of MV ↓ ICU and hospital LOS	III	Good- large collaborative with large number of

Critical Care Medicine, 191(3), 292-301	without randomization	surveillance ICUs	DV- Duration of MV, VAE events, ICU and hospital LOS, mortality			↓ VAE rates No change mortality		patients to achieve statistical significance, good data analysis
Keeper Article 7: Daily interruption of sedative infusions in critically ill patients undergoing mechanical ventilation								
Kress, J.P., (2000). The New Eng Jour Medicine, 342(20), 1471-1477	RCT	Medical ICU, 128 total patients Intervention group- 68 Control group- 60	IV- daily sedation interruption protocol DV- duration of MV, ICU and hospital LOS, use of neurological tests	Multiple forms of statistical analysis used	*p* value < 0.05 significant	↓ Duration of MV ↓ ICU LOS ↓ Use of neurological tests No change hospital LOS	II	Good- Well designed RCT powered for significance, good statistical analysis
Keeper Article 8: The combination of SAT and SBT protocols may help reduce the incidence of ventilator-associated pneumonia in the burn intensive care unit								
Lee, Y-L, L., (2017). Jour of Burn and Research, 38(2), e574-e579.	Retrospective pre- and post-cohort study	1 Burn ICU 171 pre-patients 136 post patients	IV- daily SAT protocol (if passed then SBT protocol) DV- ventilator days, ICU and hospital LOS, pneumonia, mortality	Multiple forms of statistical analysis used	SPSS used for data analysis *p* value < 0.05 significant	↓ Ventilator days (MV duration) ↓ ICU LOS ↓ Incidence of pneumonia No change in hospital LOS No change in mortality	III	Good- well designed pre- and post-cohort study, powered for significance, good data analysis

Keeper Article 9: The effect of daily sedation interruption protocol on early incidence of ventilator-associated pneumonia among patients hospitalized in critical care units receiving mechanical ventilation								
Shahadi, M., (2016). Iran Jour of Nursing and Midwifery Res, 21(5), 541-546.	RCT	1 Adult ICU Intervention and Control groups each with 40 patients	IV- daily sedation vacation protocol DV- incidence of VAP	ANOVA, chi-square, *t*-test analysis used	*p* value < 0.05 significant	↓ Incidence of ventilator associated pneumonia	II	Good- small study but included randomization and still powered for significance

Legend: SAT= spontaneous awakening trial; ICU= intensive care unit; IV= independent variable; DV= dependent variable; MV= mechanical ventilation; RCT= randomized control trial; DSI= daily sedation interruption; SBT= spontaneous breathing trial; VAE= ventilator associated event; VAP= ventilator associated pneumonia

Figure 2: Evaluation Table for SAT Barriers and Challenges

Citation	Conceptual Framework	Design/ Method	Sample/Setting	Major Variables Studied	Outcome Measurement	Data Analysis	Findings	Level of Evidence	Quality of Evidence
Keeper Article 1: Implementation challenges in the intensive care unit: The why, who, and how of daily interruption of sedation									
Miller, M.A., (2012). Journal of Critical Care, 27(2), 218.e1-7	None given	Qualitative, focus groups	20 bed medical ICU at an academic medical center; physicians, nurses, respiratory therapists	Attitudes and barriers to implementation of DIS	Themes from data	Coded themes from focus group responses	No consensus of why DIS should be done, who should be excluded, or how it should be performed	VI	Good- low level of evidence but well done qualitative study using inter-disciplinary focus groups
Keeper Article 2: Diverse attitudes to and understanding of spontaneous awakening trials: Results from a statewide quality improvement collaborative									
Miller, M.A., (2013). Critical Care Medicine, 41(8), 1976-1982.	None given	Survey	241 multi-disciplinary respondents from 73 hospitals in MI	>75% of MV patients underwent SAT each day; additional survey questions for secondary variables	Survey responses	Several statistical analysis methods used (t-test, Chi square, multi-variable analysis	Wide variation in SAT practice with respect to SAT performance and patient selection	IV	Good- survey used tested for validity, strong statistical analysis
Keeper Article 3: Predictors for daily interruption of sedation therapy by nurses: A prospective multicenter study									

Roberts, R.J., (2010). Journal of Critical Care, 25(4), 660.e1-7.	None given	Interview instrument, 67 nurse and patient factors that could affect DIS; piloted and surveyed by multi-disciplinary groups	2 academic medical centers (4 medical ICUs and 1 surgical ICU), 7 month period, 130 nurses interviewed	Nurse willingness to perform DIS and contributing factors	Interview responses	Multivariate analysis	DIS not widely used with a number of potential variables identified	IV	Good- extensive interview with large number of nurses, good statistical analysis
Keeper Article 4: Predictors of clinicians' underuse of daily sedation interruption and sedation scales									
Sneyers, B., (2017). Journal of Critical Care, 38, 182-189.	None given	Survey	All 101 ICUs in Belgium, nurses and physicians surveyed	Rates of underuse of sedation scales and DSI, predictors for underuse	Survey responses	Univariate and multivariate logistic regression	Lack of familiarity with DSI was strongest predictor of underuse	IV	Good- large population surveyed, good statistical analysis
Keeper Article 5: What stops us from following sedation recommendations in intensive care units? A multicentric qualitative study									
Sneyers. B., (2014). Journal of Critical Care, 29(2), 291-297.	Gurses' inter-disciplinary conceptual framework	Interview	4 Belgian ICUs, 21 healthcare providers interviewed	Barriers resulting in low adherence to DSI	Interview content	Content analyzed for themes	Barriers arise from healthcare provider, guideline, and system character-istics	VI	Good- interview valid and reliable, themes from interviews organized into 3 categories

Legend: ICU = intensive care unit; DIS = daily interruption of sedation; MV= mechanical ventilation; SAT = spontaneous awakening trial; DSI = daily sedation interruption

Figure 3: Synthesis Table for SAT Protocol

Outcome	1	2	3	4	5	6	7	8	9
Duration of MV	↓	↓	↓	↓	↓	↓	↓	↓	
ICU LOS		↓	↓	↓	**NC**	↓	↓	↓	
Hospital LOS			↓	↓		↓	**NC**	**NC**	
Ventilator associated events, including pneumonia						↓		↓	↓
Incidence of delirium	↓		↓						
Rate of tracheostomy		↓							
Mobility	↑								
Self-extubation				↑	**NC**				
Use of neurological tests							↓		
Mortality				↓		**NC**		**NC**	

Legend: SAT= spontaneous awakening trial; MV= mechanical ventilation; ICU= intensive care unit; LOS= length of stay; NC= no change

Figure 4: Level of Evidence Table for SAT Protocol

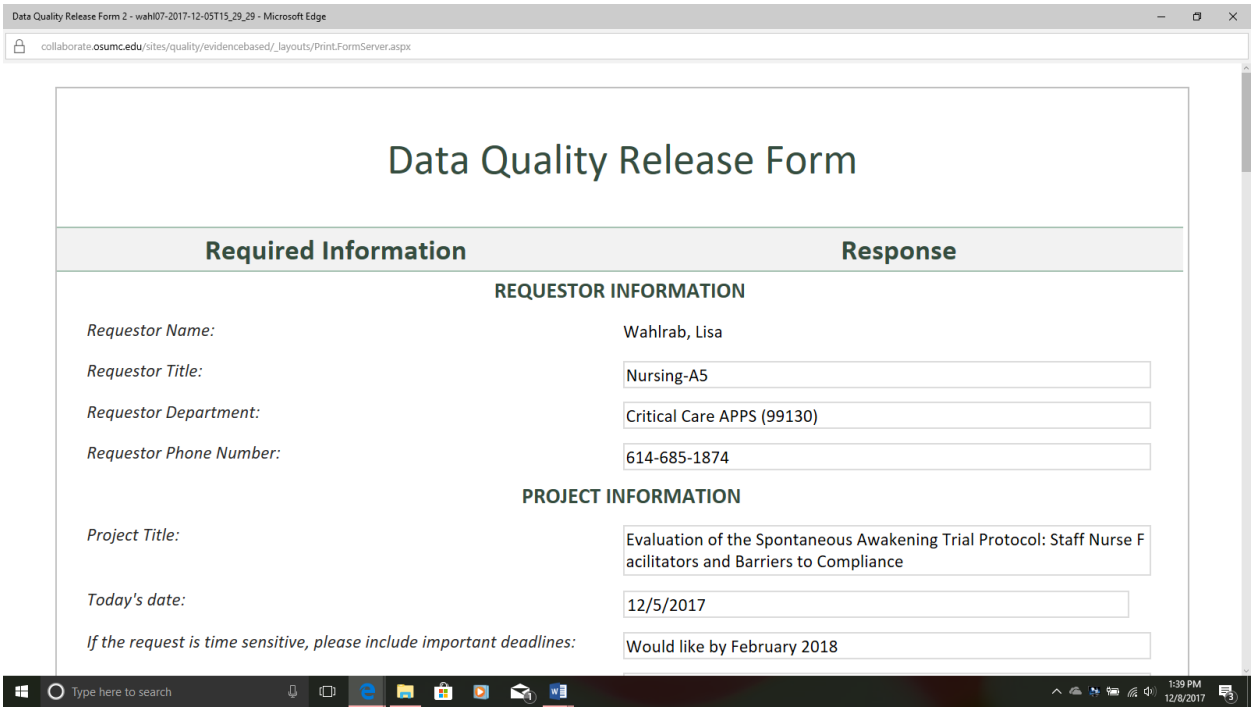
Keeper Article	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
Level I: Systematic review or meta-analysis		X							
Level II: Randomized controlled trial				X			X		X
Level III: Controlled trial without randomization	X				X	X		X	
Level IV: Case-control or cohort study			X						
Level V: Systematic review of qualitative or descriptive studies									
Level VI: Qualitative or descriptive study									

Figure 5: Level of Evidence Table for Barriers and Challenges to SAT Protocol

Keeper Article	**1**	**2**	**3**	**4**	**5**
Level I: Systematic review or meta-analysis					
Level II: Randomized controlled trial					
Level III: Controlled trial without randomization					
Level IV: Case-control or cohort study		X	X	X	
Level V: Systematic review of qualitative or descriptive studies					
Level VI: Qualitative or descriptive study	X				X
Level VII: Expert opinion or consensus					

Appendix A

Data Quality Release Form

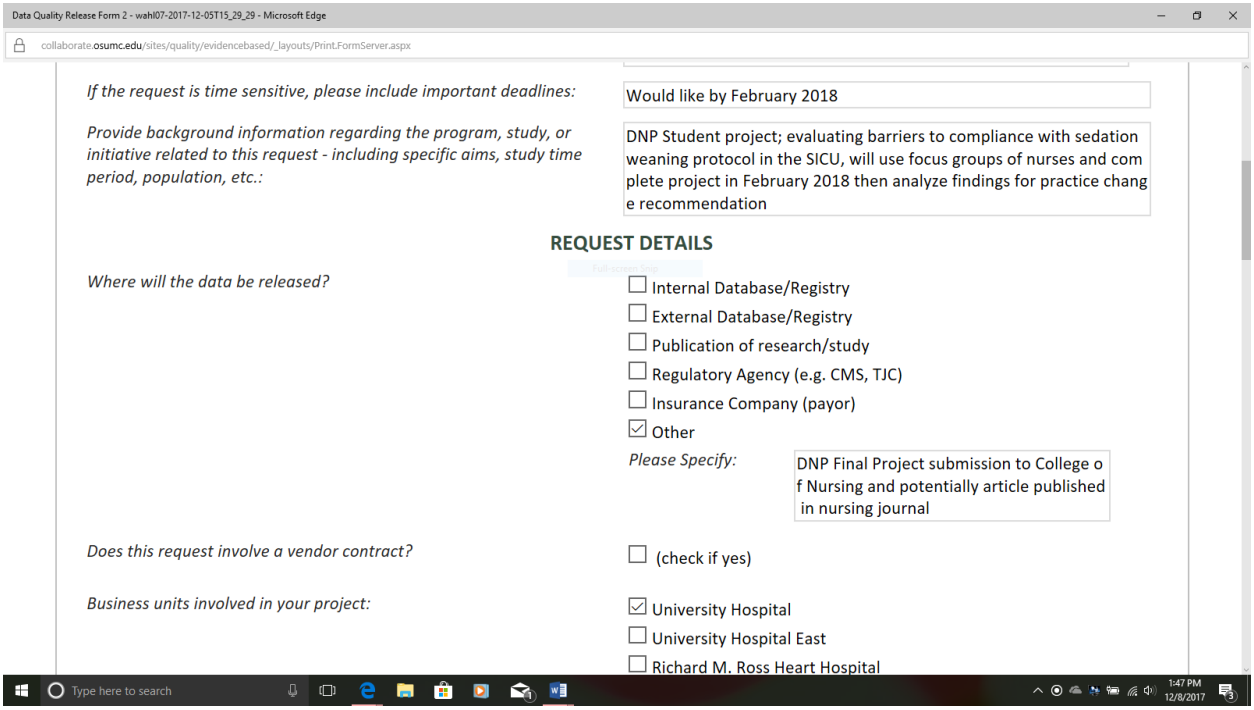


Data Quality Release Form 2 - wahl07-2017-12-05T15_29_29 - Microsoft Edge

collaborate.osumc.edu/sites/quality/evidencebased/_layouts/Print.FormServer.aspx

Data Quality Release Form

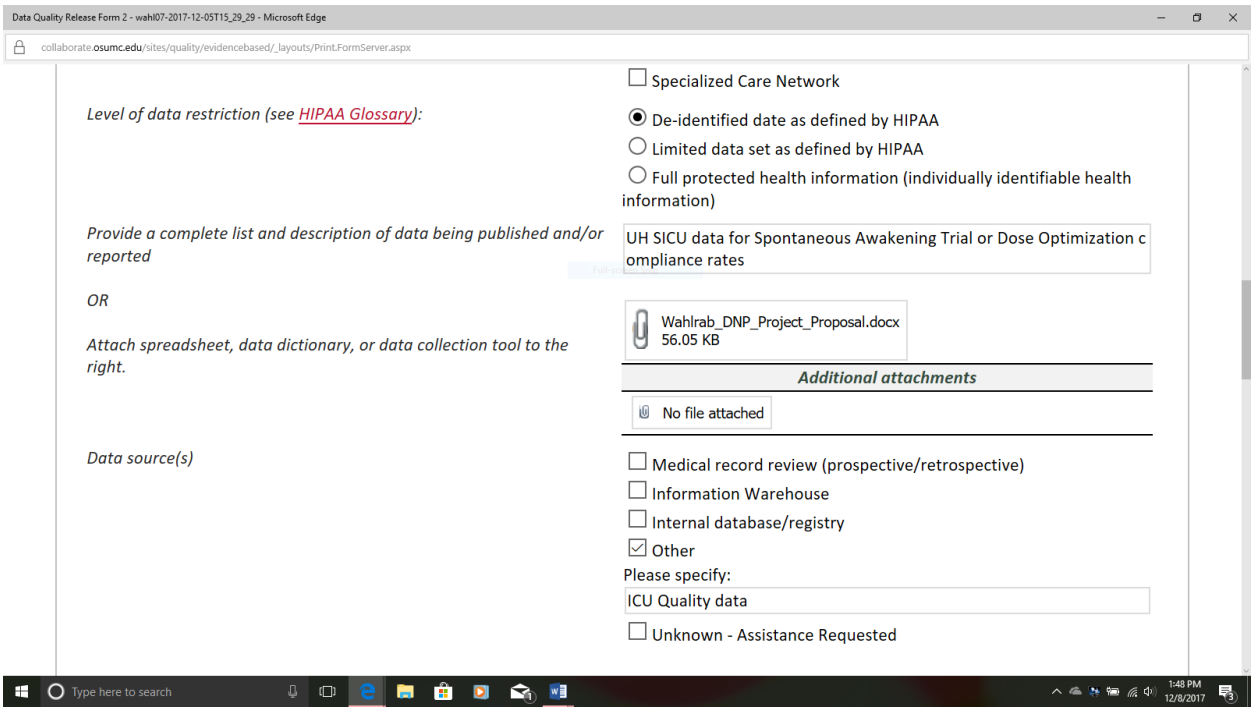
Required Information	Response
REQUESTOR INFORMATION	
Requestor Name:	Wahlrab, Lisa
Requestor Title:	Nursing-A5
Requestor Department:	Critical Care APPS (99130)
Requestor Phone Number:	614-685-1874
PROJECT INFORMATION	
Project Title:	Evaluation of the Spontaneous Awakening Trial Protocol: Staff Nurse Facilitators and Barriers to Compliance
Today's date:	12/5/2017
If the request is time sensitive, please include important deadlines:	Would like by February 2018



Data Quality Release Form 2 - wahl07-2017-12-05T15_29_29 - Microsoft Edge

collaborate.osumc.edu/sites/quality/evidencebased/_layouts/Print.FormServer.aspx

If the request is time sensitive, please include important deadlines:	Would like by February 2018
Provide background information regarding the program, study, or initiative related to this request - including specific aims, study time period, population, etc.:	DNP Student project; evaluating barriers to compliance with sedation weaning protocol in the SICU, will use focus groups of nurses and complete project in February 2018 then analyze findings for practice change recommendation
REQUEST DETAILS	
Where will the data be released?	☐ Internal Database/Registry ☐ External Database/Registry ☐ Publication of research/study ☐ Regulatory Agency (e.g. CMS, TJC) ☐ Insurance Company (payor) ☑ Other *Please Specify:* DNP Final Project submission to College of Nursing and potentially article published in nursing journal
Does this request involve a vendor contract?	☐ (check if yes)
Business units involved in your project:	☑ University Hospital ☐ University Hospital East ☐ Richard M. Ross Heart Hospital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collaborate.osumc.edu/sites/quality/evidencebased/_layouts/Print.FormServer.aspx
Specialized Care Network
Level of data restriction (see HIPAA Glossary):
De-identified date as defined by HIPAA
Limited data set as defined by HIPAA
Full protected health information (individually identifiable health information)
Provide a complete list and description of data being published and/or reported
UH SICU data for Spontaneous Awakening Trial or Dose Optimization compliance rates
OR
Attach spreadsheet, data dictionary, or data collection tool to the right.
Wahlrab_DNP_Project_Proposal.docx
56.05 KB
Additional attachments
No file attached
Data source(s)
Medical record review (prospective/retrospective)
Information Warehouse
Internal database/registry
Other
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ICU Quality data
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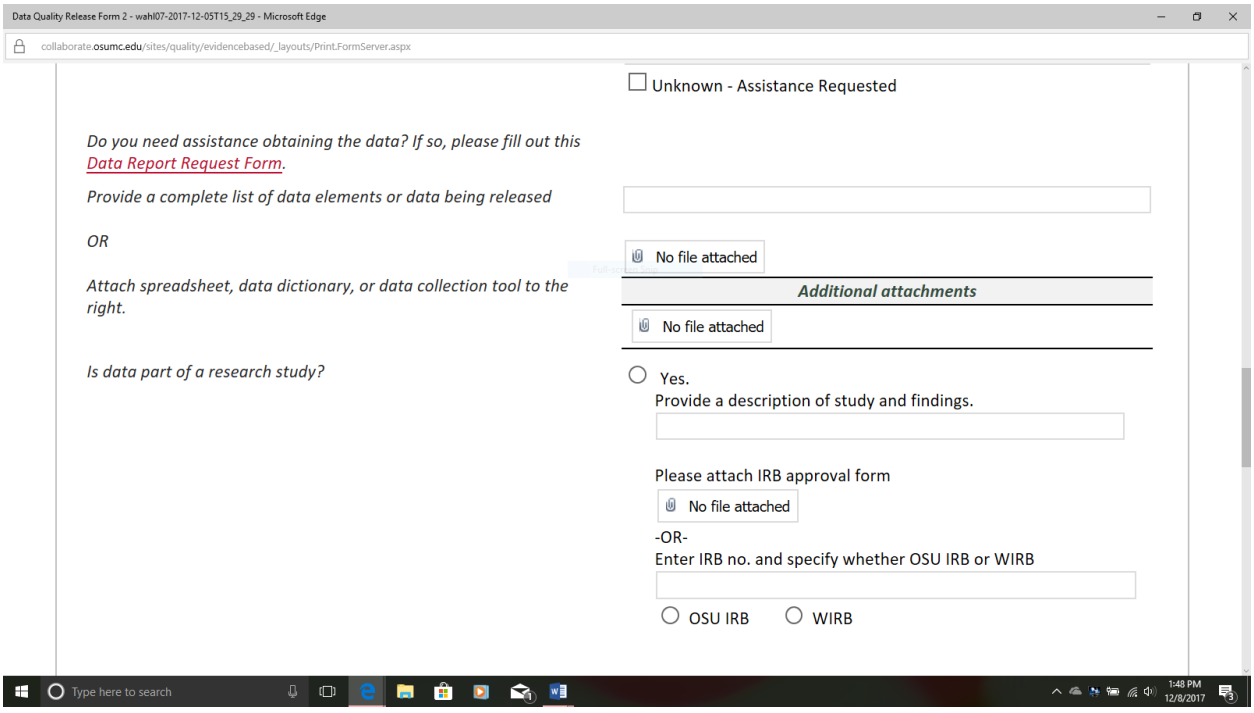
12/8/2017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Do you need assistance obtaining the data? If so, please fill out this Data Report Request Form.
Provide a complete list of data elements or data being released
OR
No file attached
Attach spreadsheet, data dictionary, or data collection tool to the right.
Additional attachments
No file attached
Is data part of a research study?
Yes.
Provide a description of study and findings.
Please attach IRB approval form
No file attached
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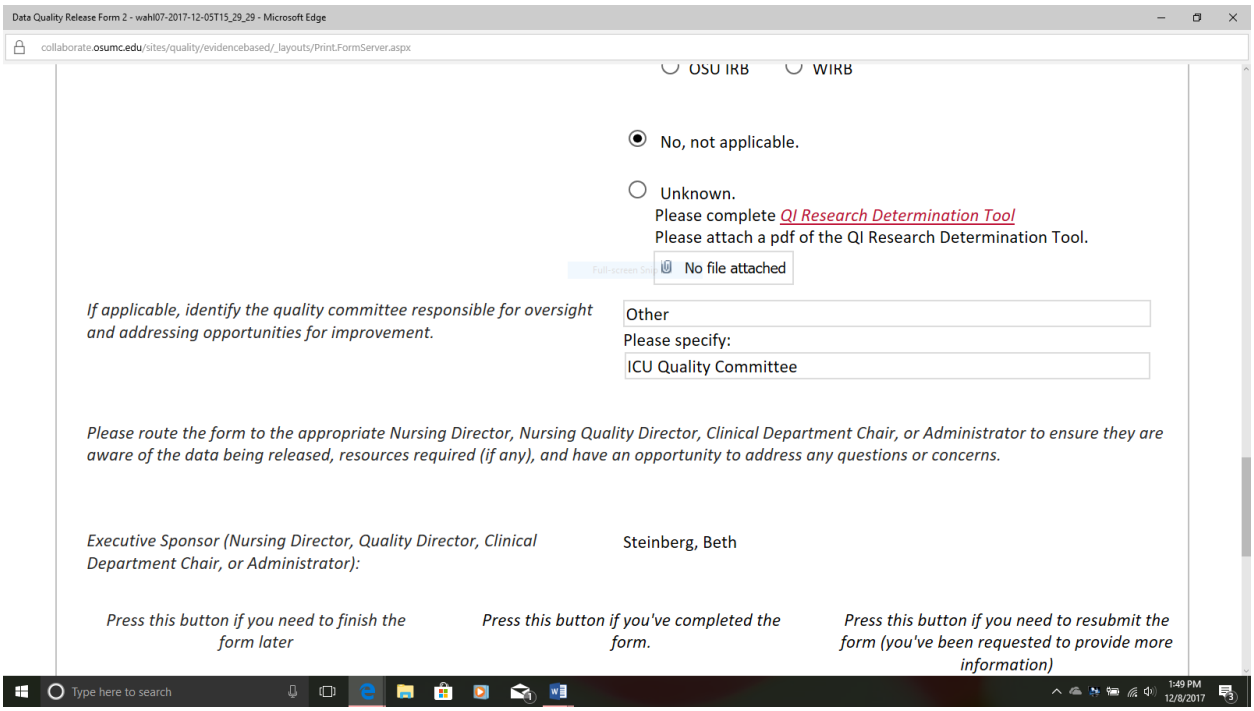
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OSU IRB
WIRB
No, not applicable.
Unknown.
Please complete QI Research Determination Tool
Please attach a pdf of the QI Research Determination Tool.
No file attached
If applicable, identify the quality committee responsible for oversight and addressing opportunities for improvement.
Other
Please specify:
ICU Quality Committee
Please route the form to the appropriate Nursing Director, Nursing Quality Director, Clinical Department Chair, or Administrator to ensure they are aware of the data being released, resources required (if any), and have an opportunity to address any questions or concerns.
Executive Sponsor (Nursing Director, Quality Director, Clinical Department Chair, or Administrator):
Steinberg, Beth
Press this button if you need to finish the form later
Press this button if you've completed the form.
Press this button if you need to resubmit the form (you've been requested to provide more information)
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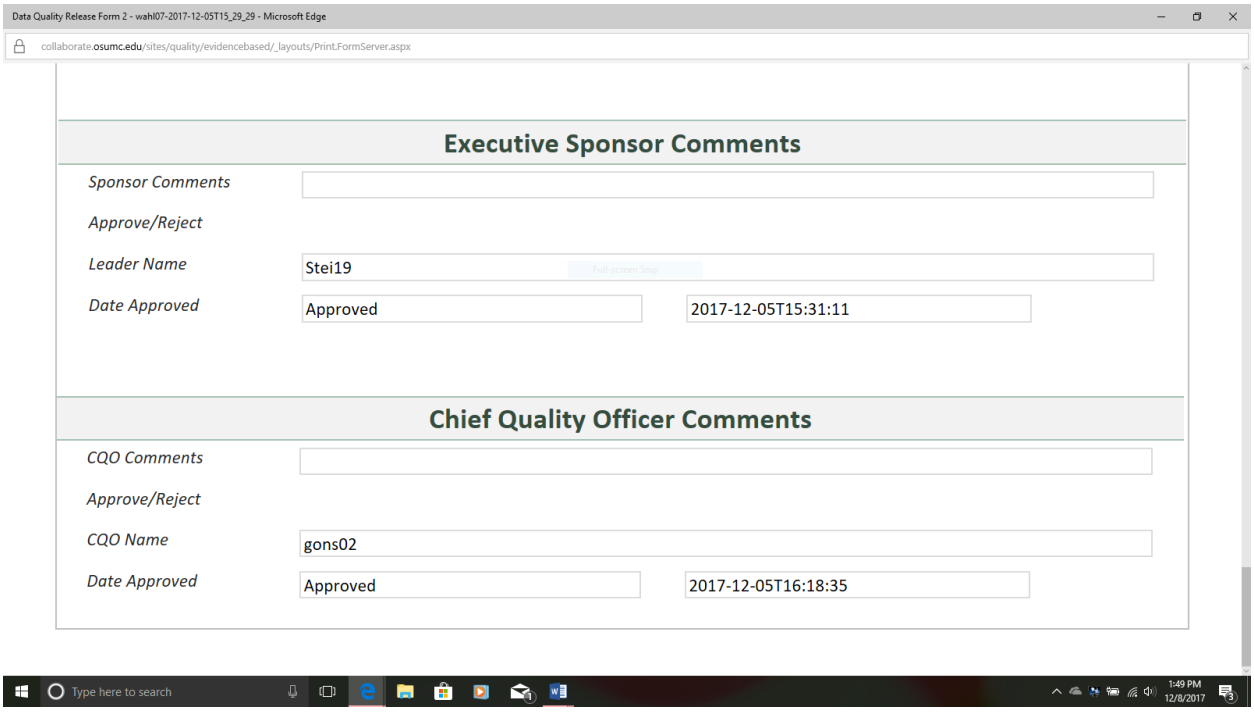
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Executive Sponsor Comments
Sponsor Comments
Approve/Reject
Leader Name
Stei19
Date Approved
Approved
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Chief Quality Officer Comments
CQO Comments
Approve/Reject
CQO Name
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Appendix B

Focus Group Consent Script

Introduction

Hello my name is Lisa Wahlrab. I am a DNP student at The Ohio State University College of Nursing.

The purpose of these focus groups is to better understand the use of the SAT protocol in the SICU. I would like to ask you some questions regarding your experience with the SAT protocol.

The information you share with me will help me to identify facilitators and barriers to compliance with the SAT protocol.

Procedures

The focus groups will take about 15-30 minutes of your time. Please use only first names during the focus group discussion. You also have the option to use a pseudonym. I would also like you to fill out a basic demographic survey but do not include your name on the survey. I will not link your name to anything you say in the transcript of the focus group or the final report of the project or any other publication.

Incentives

There is no incentive, other than the snacks provided during this focus group. However, your participation will potentially help to improve the SAT protocol policy for the unit.

Explain that the participants have the right to withdraw at any time

If you would like to participate in the focus group please stay; if you choose not to participate you may leave at any time.

Risk and Confidentiality

There is minimal risk to participation in the focus group. Participation is voluntary and your identity will be kept confidential and not used in any transcript, report, or publication. Your participation in the focus group will not affect any of your professional performance or evaluations. You may decide not to participate and can withdraw at any time. To protect your identity you have the option to use a pseudonym if you prefer. If you decline to participate, or choose to withdrawal your participation and leave the focus group, that action will not affect any benefits to which you are otherwise entitled. Your decision will not affect your future relationship with The Ohio State University.

Upon project completion the transcripts and the digital recordings from these focus groups will be destroyed. If results are published you will not be identified.

Informed Consent

If you have any additional questions concerning this quality improvement project or your participation in it, please feel free to contact the me.

To reiterate; participation is voluntary. If you decide not to participate, there will be no penalty or loss of benefits to which you are otherwise entitled. You can, of course, decline to discuss any issue or answer any question, as well as to stop participating at any time, without any penalty or loss of benefits to which you are otherwise entitled.

- Lisa Wahlrab, DNP Student
  College of Nursing
  937-620-4245
  Lisa.wahlrab@osumc.edu

(The participant will be given a piece of paper with the DNP student's name and contact information.)

I would like to make an audio recording of the focus group discussion so that I can have an accurate record of the information you provide to me. I will have the recording transcribed and the transcription will be confidential and secured. To reiterate, I will destroy the transcriptions and digital recordings upon completion of the project.

Do you have questions regarding the focus group discussion and participation? Do you agree to participate? May I record our discussion?

If so, let's begin….